



United States  
Department of  
Agriculture

Forest Service

North Central  
Experiment Station



# New from North Central

## Publications

August 1988-April 1989

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NOTE N

### **1. Research Note NC-346.**

Haines, Donald A.; Frost, John S. 1988. Fire-weather stations in the northeastern United States. Res. Note NC-346. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 3 p.

Presents northeastern locations of instrumented fire-weather stations that record data necessary for input into the National Fire-Danger Rating System.

### **2. Resource Bulletin NC-104.**

Hansen, Mark H.; Golitz, Mark F. 1988. Timber resource of the Indiana Knobs Unit, 1986. Resour. Bull. NC-104. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 92 p.

The third inventory of Indiana's timber resource shows that commercial forest area in the Knobs Unit decreased less than 2 percent between 1967 and 1986, from 1,769 to 1,741 thousand acres. During the same period growing-stock volume increased 33 percent. Highlights and statistics are presented on area, volume, growth, mortality, and removals.

### **3. Resource Bulletin NC-105.**

Raile, Gerhard K.; Leatherberry, Earl C. 1988. Illinois' forest resource. Resour. Bull. NC-105. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 113 p.

The third inventory of timber resources in Illinois shows a 1.2 percent increase in timberland and a 40.5 percent gain in growing-stock volume between 1962 and 1985. Text and statistics are presented on area, volume, growth, mortality, removals, utilization, biomass, and future timber supply.

### **4. Resource Bulletin NC-107.**

Spencer, John S., Jr.; Smith, W. Brad; Hahn, Jerold T.; Raile, Gerhard K. 1988. Wisconsin's fourth forest inventory, 1983.

Resour. Bull. NC-107. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 158 p.

The fourth inventory of the timber resource of Wisconsin shows that growing-stock volume increased from 11.2 to 15.5 billion cubic feet between 1968 and 1983, and area of timberland increased from 14.5 to 14.8 million acres. Presented are analysis and statistics on forest area and timber volume, growth, mortality, removals, and projections.

### **5. Resource Bulletin NC-109.**

Blyth, James E.; Weatherspoon, Anthony K.; Smith, W. Brad. 1988. Michigan timber industry—an assessment of timber product output and use. Resour. Bull. NC-109. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 55 p.

Discusses recent Michigan forest industry trends; production and receipts of pulpwood, saw logs, and veneer logs; and production of other timber products in 1984. Reports on logging residue, on wood and bark residue generated at primary wood-using mills, and on disposition of this mill residue.

### **6. Research Paper NC-283.**

Balogh, James C.; Grigal, David F. 1988. Tall shrub dynamics in northern Minnesota aspen and conifer forests. Res. Pap. NC-283. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 15 p.

Tall shrub dynamics were examined in upland stands in northern Minnesota. Mortality rates of shrub stems did not differ among the stands. Shrub stem regeneration did differ among the stands and was related to overstory characteristics, soil moisture, and soil nutrients. Stem density was regulated by annual regeneration.

### **7. Research Paper NC-284.**

Rose, Dietmar W.; Blinn, Charles R.; Brand, Gary J. 1988. A guide to forestry investment analysis. Res. Pap. NC-284.

St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 23 p.

It is often necessary to choose between several forestry projects. This paper provides the background needed to evaluate projects from a financial perspective. The basic steps for preparing a project analysis, suggestions for dealing with uncertainty, and techniques for monitoring a project are presented.

### **8. General Technical Report NC-119.**

Walters, Nancy R. 1988. Central States forest management guides as applied in STEMS. Gen. Tech. Rep. NC-119. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 22 p.

Describes a management prescription system for Central States cover types developed for use in the Central States Stand and Tree Evaluation and Modeling System (STEMS). It includes one management guide for each of the six major cover types in the region. Each guide consists of a decision key that prescribes management, based on stand characteristics and a set of marking rules that carries out the prescription. This management component can be used within STEMS or apart from it as a guide to making silvicultural decisions in the Central States.

### **9. General Technical Report NC-123.**

Blinn, Charles R.; Rose, Dietmar W.; Belli, Monique L. 1988. Guide to analyzing investment options using TWIGS. Gen. Tech. Rep. NC-123. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 15 p.

Describes methods for analyzing economic return of simulated stand management alternatives in TWIGS. Defines and discusses net present value, equivalent annual income, soil expectation value, and real vs. nominal analyses. Discusses risk and sensitivity analysis when comparing alternatives.

### **10. General Technical Report NC-124.**

Baumgartner, David C.; Marty, Robert J. 1988. Evaluation of resources at risk from wildland fires. Gen. Tech. Rep. NC-124. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 12 p.

Shows how existing information can be used to draw inferences about the distribution of values at risk from wildfire in Michigan, using example counties from the northern Lower Peninsula.

### **11. General Technical Report NC-126.**

Hodges, Donald G.; Jakes, Pamela J.; Cubbage, Frederick W. 1988. The status of forest management research in the United States. Gen. Tech. Rep. NC-126. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 16 p.

In 1985, the USDA Forest Service invested nearly \$30 million in forest management research, forest industry invested \$19 million, and universities invested at least \$17 million. Investments in this research have been declining since then. Forest Service data indicate that the public sector is the largest beneficiary of forest management research.

### **12. General Technical Report NC-129.**

Rouse, Cary. 1988. Fire eastern forests: red pine

### **13. General Technical Report NC-130.**

Smith, W. Brad; Hahn, Jerold T. 1989. Wisconsin's forest statistics, 1987: an inventory update. Gen. Tech. Rep. NC-130. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 48 p.

The Wisconsin 1987 inventory update, derived by using tree growth models, reports 14.7 million acres of timberland, a decline of less than 1 percent since 1983. This bulletin presents findings from the inventory update in tables detailing timberland area, volume, and biomass.

The following NC publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The price is \$9.00. Be sure to include: **Stock Number 001-001-00634-3.**

### **Miscellaneous.**

U.S. Department of Agriculture, Forest Service. Burde, E. Lucy, ed. 1988. Walnut Notes. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. (A collection of 31 loose-leaf notes with varied pages and note numbers.)

A practical management guide for field foresters written in a nontechnical style and compiled in a loose-leaf format.

### **Recently reprinted and available!**

#### **14. How-To 17.**

Skilling, Darroll D. Rev. 1985. How to identify and control *Rhizosphaera* needlecast. St. Paul, MN: U.S. Department of Agriculture, Forest Service. 4 p.

#### **15. How-To 19.**

Ostry, Michael E.; Nicholls, Thomas H. 1976. How to identify eastern dwarf mistletoe on black spruce. St. Paul, MN: U.S. Department of Agriculture Forest Service. 6 p.

#### **16. How-To 30.**

Kessler, Kenneth J., Jr. 1978. How to control sapstreak disease of sugar maple. U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 6 p.

#### **17. How-To 33.**

Schipper, Arthur L., Jr.; Widin, Katharine D.; Anderson, Robert L. 1978. How to identify leaf rust of poplar and larch. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 6 p.

## NOTICE

The following is a list of our articles that appear in various Journals, etc. We do NOT have any in stock at this time. You may check with your local college or forestry library or appropriate Journal for a copy of the article.

Barten, Paul Kevin.

1988. Modeling streamflow from headwater catchments in the northern Lake States. St. Paul, MN: University of Minnesota. 305 p. Thesis.

[Bengston, David N.]

1987. What are the benefits from public sector forestry research? In: Public research in agriculture, forestry and home economics: its role, its benefits, and selected issues. IR-6 Inf. Rep. 87-3. St. Paul, MN: University of Minnesota, Department of Agricultural and Applied Economics: 36-39.

Bengston, David N.; Kaiser, H. Fred.

1988. Research planning and evaluation in the U.S. Forest Service: current practice and options for improvement. Evaluation Review. 12(3): 276-290.

Bengston, David N.; Gregersen, Hans M.; Haygreen, John.

1988. Seesawing across the forty-ninth parallel: the international diffusion of a wood-based technology. Journal of Forest History. 32(2): 82-88.

Bengston, David N.; Gregersen, Hans M.; Lundgren, Allen L.; Hamilton, Lawrence S.

1988. Forestry research capacity in the Asia-Pacific region. Occas. Pap. 6. Honolulu, HI: Environment and Policy Institute, East-West Center. 96 p.

Bradley, Dennis P.

1987. Wood energy potentials in northeastern Minnesota. In: Bradley, Dennis P.; Lothner, David C., comps. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 1-5.

Bradley, Dennis P.; Gephart, John S.

1987. Estimating wood energy demand in northeastern Minnesota. In: Bradley, Dennis P.; Lothner, David C., comps. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 44-59.

Bradley, Dennis P.; Lothner, David C., comps.

1987. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 82 p.

Ceulemans, Reinhart; Hinckley, T.M.; Isebrands, J.G.; Stettler, R.F.; Wiard, B.M.

1988. Leaf orientation and net photosynthesis of different *Populus* clones. Supplement to Plant Physiology 86(4): 71. Abstract 424.

Chapman, Richard C.; Hamerly, Michael E.; Mech, L. David.

1985. A microcomputer-based capture collar. In: Weeks, Richard W.; Long, Francis M., co-eds. Proceedings, 5th International conference on wildlife biotelemetry; [1985 September 30]; [Chicago], [IL]. [Chicago], [IL]: International Conference on Wildlife Biotelemetry: 78-84.

Cole, David N.; Marion, Jeffrey L.

1988. Recreation impacts in some riparian forests of the eastern United States. Environmental Management. 12(1): 99-107.

Crow, T.R.

1988. Reproductive mode and mer self-replacement of northern red oak (*rubra*) - a review. Forest Science

Dwyer, John F.

1987. Predicting daily use of an urban forest recreation site. In: Hiebert, Ronald D.; Wood, James D., Jr., eds. Proceedings of the 1st Indiana Dunes Research conference: symposium on visitor aspects of resource management; 1986 May 1-3; Gary, IN. Atlanta, GA: U.S. Department of Interior, National Park Service, Scientific Publication Office: 20-33.

Ek, Alan R.; Hoganson, Howard M.; Hahn, Jerold T.

1987. Predicting multiproduct timber yield for long-term supply analyses. In: Bradley, Dennis P.; Lothner, David C., comps. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 6-12.

Ellefson, Paul V.; Wheatcraft, Andrew M.; Bradley, Dennis P.

1987. Policy options to encourage wood energy use in northern Minnesota. In: Bradley, Dennis P.; Lothner, David C., comps. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 66-76.

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1988. Decomposition in an ombrotrophic bog and a minerotrophic fen in Minnesota. *Soil Science*. 145(5): 353-358.

Fox, Glenn.

1987. Models of resource allocation in public agricultural research: a survey. *Journal of Agricultural Economics*. 38(3): 449-462.

Haines, Donald A.

1988. A lower atmospheric severity index for wildland fires. *National Weather Digest*. 13(2): 23-27.

Hairston, Anne Bartlett.

1988. Soil topographic relationships at two forested sites in Minnesota. St. Paul, MN: University of Minnesota. 105 p. Thesis.

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1988. Forest tree biotechnology: unique tools to enhance forest productivity. In: 14th session of the North American Forestry Commission; 1987

October 13-17; Sault Ste. Marie, ON. Joint Rep. 12. Sault Ste. Marie, ON: Great Lakes Forestry Centre and the Food and Agriculture Organization of the United Nations: 1-5, 18-19.

Hansen, Edward A.

[1988]. Energy plantations in north central United States: status of research and development plantations. In: Heinonen, Jorma; Kainlahti, Eino; Byrne, John; Rich, Daniel; Salminen, Mervi; Seppanen, Olli, eds. International symposium, Energy options for the year 2000: contemporary concepts in technology and policy: Proceedings from the panel on energy systems; 1988 September 14-17; [Newark], [DE]. Newark, DE: University of Delaware, Center for Energy and Urban Policy Research; 1: 1.255-1.259.

Hansen, Mark H.

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Hansen, Mark H.; Hahn, Jerold T.

1988. Database management provides easy access to forest inventory data. *Northern Journal of Applied Forestry*. 5(1): 8-11.

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1988. Photosynthesis and respiration of northern red oak seedlings. In: Van Sambeek, J.W.; Rink, George; Johnson, Paul S., eds. 3d workshop on seedling physiology and growth problems in oak plantings (abstracts); 1986 February 12-13; Carbondale, IL. Gen. Tech. Rep. NC-121. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 4. Abstract.

Hanson, P.J.; Isebrands, J.G.; Dickson, R.E.; Dixon, R.K.

1988. Ontogenetic patterns of CO<sub>2</sub> exchange of *Quercus rubra* L. leaves during three flushes of shoot growth. I. Median flush leaves. *Forest Science*. 34(1): 55-68.

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1987. An assessment of productivity and harvesting costs for various forest harvest systems. In: Bradley, Dennis P.; Lothner, David C., comps. Achieving wood energy potentials: evidence in northeastern Minnesota. Gen. Tech. Rep. NC-114. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 31-37.

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Hodges, Donald G.; Harris, Thomas G., Jr.

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Kangas, Roy J.; Matson, Edsel D., inventors; the United States of America as represented by the Secretary of Agriculture, Washington, DC, assignee. 1988. Mechanism for storing, singulating and planting woody cuttings. U.S. patent 4,732,094. March 22. 10 p. Int. Cl.<sup>4</sup> A01C 11/00. U.S. Cl. 111/3.

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1988. Growth and development during the establishment year of two *Populus* clones with contrasting morphology and phenology. *Tree Physiology*. 4: 139-152.

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1987. Response of clear and colored lakes to acid deposition. In: NADP technical committee meeting abstracts of papers; 1987 November 2-5; Minneapolis, MN. Fort Collins, CO: Colorado State University, NADP/NTN Coordinator's Office: 12. Abstract.

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1988. Effects of juglone on growth and nodulation of hairy vetch. In: Payne, Jerry A., ed. 78th annual report of the Northern Nut Growers Association; 1987 July 26-29; Lexington, KY. Urbana, IL: Northern Nut Growers Association: 46-50.

Powers, H.R., Jr.; Stone, D.M.

1988. Control of tip moth by Carbofuran reduces fusiform rust infection on loblolly pine. Res. Pap. SE-270. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station. 4 p.

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1987. Small mammal communities in three aspen stand-age classes. *Canadian Field-Naturalist*. 101(3): 362-368.

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1988. Variation in growth among white oak seedlings in a half-sib progeny test. In: Van Sambeek, J.W.; Rink, George; Johnson, Paul S., eds. 3d workshop on seedling physiology and growth problems in oak plantings (abstracts); 1986 February 12-13; Carbondale, IL. Gen. Tech. Rep. NC-121. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station: 1. Abstract.
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